

## ABSTRACT

A real-time buffer manager system that calculates optimal food buffer levels, for both completed products and product components, based on real-time counts of restaurant patrons throughout a restaurant's property and the estimated time for them to arrive at a food ordering station. The real-time buffer manager employs a computer vision system, running a series of 2D image processing techniques that detect and track vehicles and people in several camera views. Patron counts are fed from the computer vision system into a queuing model that estimates when each patron will arrive at an ordering station. Thus, instead of analyzing historical sales data, the buffer manager according to the present invention electronically performs direct measurement of probable future demand, and electronically predicts, in real-time, what the future food product demand will be in a predetermined time (e.g., 3-5 minutes) immediately following the direct measurement of the demand.